

U.S. Patent Application Serial No. 09/417,705
Amendment dated April 29, 2004
Reply to OA of **January 29, 2004**

REMARKS

Claims 1 and 6-9 are currently being examined, of which claim 1 has been amended. Claims 2-5 have been canceled without prejudice or disclaimer of their subject matter. It is respectfully believed that no new matter has been added.

Before turning to the cited art, a brief review of the present invention is in order. According to the principles of the present invention, when a first image signal having a first resolution corresponding to an object is outputted from an imaging device, a thinning-out circuit applies a thinning-out process to the first image signal so as to create a second image signal having a second resolution lower than the first resolution. A memory has at least two memory areas, and each of the two memory areas is selectively selected by a selector.

According to the principles of the present invention, the present invention includes an imaging device which outputs one screen of a first image signal every first period, and a reader reading out one screen of a second image signal every second period shorter than the first period, the first period is an integral multiple of the second period, and a selector switches a memory area to be selected at an interval of the first period.

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Claims 1 and 9 stand rejected under 35 USC 103(a) as obvious over USP 5,734,427
(**Hayashi**) in view of USP 6,295,596 (**Hirabayashi**).

Applicant respectfully traverses this rejection.

Firstly, the Examiner has conceded that “**Hayashi** and **Hirabayashi et al.** fail to specifically disclose wherein said imaging device outputs one screen of the first image signal every first period, and said reader reading out one screen of the second image signal every second period shorter than the first period.”

Secondly, the Examiner has attempted to rely upon USP 6,292,218 (**Parulski**) to remedy the deficiencies of **Hayashi** and **Hirabayashi**, regarding the first period and second period of the present invention.

Parulski describes producing a 12 mHz clock frequency for use in a motion mode, and describes providing a 6 mHz clock frequency for a still mode. **Parulski** fails to describe, teach, or suggest writing the second image signal obtained every first period in one of the two memory areas, reading the second image signal stored in the other of the two memory areas every second

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period, which is 1/integral numeral of the first period, and switching the selection of the memory areas every first period.

The above three references, **Hayashi**, **Hirabayashi**, and **Parulski**, do not describe, teach, or suggest, alone or in combination, the following features set forth in claim 1, as amended:
“wherein said imaging device outputs one screen of the first image signal every first period, and said reader reading out one screen of the second image signal every second period shorter than the first period, the first period is an integral multiple of the second period, and said selector switches a memory area to be selected at an interval of the first period”, in combination with the other claimed features.

Furthermore, it would not have been obvious to modify or transform **Hayashi**, **Hirabayashi**, and **Parulski**, alone or in combination, to arrive at the advantageous invention set forth in claim 1, as amended.

According to the principles of the present invention, a writer writes the second image signal outputted from the thinning-out circuit to one of the two memory areas based on a selection result of the selector, and a reader reads the second image signal from the other of the two memory areas based on the selection result of the selector. An image based on the read second image signal is displayed by a displayer.

Herein, according to the principles of the present invention, the imaging device outputs one screen of the first image signal every first period, and the reader reads out one screen of the second image signal every second period shorter than the first period. In addition, the first period is an integral multiple of the second period, and the selector switches the memory area to be selected at an interval of the first period.

Since the imaging device of the present invention outputs one screen of the first image signal every first period, the thinning-out circuit also outputs one screen of the second image signal every first period. On the other hand, the displayer displays the image based on the second image signal obtained every second period shorter than the first period. Thus, a screen rate of the second image signal differs depending on whether one is referring to the thinning-out circuit or the displayer. The memory is prepared to absorb such a difference in the screen rate, and this prevents a destructive process failure resulting from the difference in the screen rate. (See also the Specification, page 8, lines 1-6.)

In addition, in the present invention, a “second period per one screen”, which is the screen rate of the second image signal read out from the memory, is faster than a “first period per one screen”, which is the screen rate of the second image signal written in the memory. As a result, if the memory area of a reading destination is the same as the memory area of a writing destination, noise resulting from an overtaking of an address appears on a display image.

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However, in the present invention, the two memory areas are formed on the memory, the first period is an integral multiple of the second period, and the memory area of an accessing destination is switched every first period so that the overtaking of the address does not occur, and so that the noise does not appear on the display image.

On the contrary, as the Examiner admits, **Hayashi** and **Hirabayashi** fail to disclose, teach, or even remotely suggest that an imaging device outputs one screen of a first image signal every first period, and a reader reads out one screen of a second image signal every second period shorter than the first period. Therefore, Applicant respectfully submits that it not possible for a person of ordinary skill in the art to arrive at the present invention starting only from the teachings of **Hayashi** and **Hirabayashi**, alone or in combination.

Furthermore, **Parulski** fails to remedy the deficiencies of the other two references, because **Parulski** fails to disclose, teach, or even remotely suggest anything about writing a second image signal obtained every first period in one of two memory areas, reading the second image signal stored in the other of the two memory areas every second period, which is $1/\text{integral numeral of the first period}$, and switching the selection of the memory areas every first period.

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In view of the foregoing, **Hayashi, Hirabayashi, and Parulski**, do not describe, teach, or suggest, alone or in combination, the following features set forth in claim 1, as amended:

“wherein said imaging device outputs one screen of the first image signal every first period, and said reader reading out one screen of the second image signal every second period shorter than the first period, the first period is an integral multiple of the second period, and said selector switches a memory area to be selected at an interval of the first period”, in combination with the other claimed features.

Thus, Applicant respectfully submits that this rejection of claims 1 and 9 should be withdrawn.

Claims 2-4 have been rejected under 35 USC 103(a) as obvious over **Hayashi** in view of **Hirabayashi** and USP 6,292,218 (**Parulski**). Claims 2-4 have been canceled without prejudice or disclaimer of their subject matter. Thus, Applicant respectfully submits that this rejection of claims 2-4 should be withdrawn.

Claims 6-8 have been objected to as being dependent upon a rejected base claim. In view of the foregoing comments and amendments regarding base claim 1, Applicant respectfully submits that this objection to claims 6-8 should be withdrawn.

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In view of the aforementioned remarks and amendments, it is respectfully submitted that all pending claims are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for a telephone conference to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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